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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/583,784	05/31/2000	Marcos N. Novaes	POU9-2000-0009-US1	4195

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EXAMINER
MAHMOUDI, HASSAN

ART UNIT	PAPER NUMBER
2175	

DATE MAILED: 05/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/583,784	Applicant(s) NOVAES ET AL.
	Examiner Tony Mahmoudi	Art Unit 2175

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 22 April 2002. D.D. 5/3/02

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-24 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-24 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

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Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Badovinatz et al (U.S. Patent No. 5,805,786) in view of Tsukerman et al (U.S. Patent No. 6,341,340), and further in view of Cotner et al (U. S. Patent No. 5,884,327)

As to claim 1, Badovinatz et al teaches a method of recovery from failures (see column 8, lines 7-10) within a distributed computing environment (see Abstract, and figure 1), the method comprising:

detecting a failure within the distributed computing environment (see Abstract, and column 8, lines 11-14); and

recovering from the failure (see Abstract, and column 6, lines 1-7, and column 8, lines 15-16), wherein one or more transactions affected by the failure are executed to completion (see column 6, lines 42-46, and figure 6.)

Badovinatz et al does not teach shared nothing distributed computing environment.

Tsukerman et al teaches a hybrid shared nothing/shared disk database system (see column 1, lines 6-8, and column 3, lines 64-65.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Badovinatz et al to introduce failure detection within a shared nothing distributed computer system.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Badovinatz et al by the teaching of Tsukerman et al, because it would allow failure detection and recovery within a shared nothing distributed computing environment.

Badovinatz et al as modified does not teach execution of transactions to completion without rolling back the one or more transactions and without requiring a reposting of the one or more transactions.

Cotner et al teaches a method for a two-phase commit/rollback protocol in a distributed transaction processing system (see Abstract, and column 5, lines 64-67, wherein reposting of the transaction is read as committing the transaction. Cotner et al discloses that a database administrator is given a way to manually determine the outcome of transaction to commit or rollback. Also see column 5, lines 34-41, and column 6, lines 39-43, and column 20, lines 10-15.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Badovinatz et al as modified to add execution to completion without rolling back or requiring a posting of the transactions.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Badovinatz et al as modified, by the teaching of Cotner et al because recovering from the failure wherein one or more transactions affected by the

failure are executed to completion without rolling back the one or more transactions and without requiring a reposting of the one or more transactions would speed up the process of failure detection and recovery within the distributed system.

As to claim 2, Badovinatz et al teaches a system of recovery from failures (see column 2, lines 16-17, and figure 1) within a distributed computing environment (see Abstract, and figure 1), the method comprising:

means for detecting a failure within the distributed computing environment (see Abstract, and column 8, lines 11-14); and

means for recovering from the failure (see Abstract, and column 6, lines 1-7, and column 8, lines 15-16), wherein one or more transactions affected by the failure are executed to completion (see column 6, lines 42-46, and figure 6.)

Badovinatz et al does not teach shared nothing distributed computing environment.

Tsukerman et al teaches a hybrid shared nothing/shared disk database system (see column 1, lines 6-8, and column 3, lines 64-65.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Badovinatz et al to introduce means for failure detection within a shared nothing distributed computer system.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Badovinatz et al by the teaching of Tsukerman et al, because it would allow failure detection and recovery within a shared nothing distributed computing environment.

Badovinatz et al as modified does not teach execution of transactions to completion without rolling back the one or more transactions and without requiring a reposting of the one or more transactions.

Cotner et al teaches a system for a two-phase commit/rollback protocol in a distributed transaction processing system (see Abstract, and column 5, lines 64-67, wherein reposting of the transaction is read as committing the transaction. Cotner et al discloses that a database administrator is given a way to manually determine the outcome of transaction to commit or rollback. Also see column 5, lines 34-41, and column 6, lines 39-43, and column 20, lines 10-15.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Badovinatz et al as modified to add execution to completion without rolling back or requiring a posting of the transactions.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Badovinatz et al as modified, by the teaching of Cotner et al because recovering from the failure wherein one or more transactions affected by the failure are executed to completion without rolling back the one or more transactions and without requiring a reposting of the one or more transactions would speed up the process of failure detection and recovery within the distributed system.

As to claim 3, Badovinatz et al teaches at least one program storage device (see figures 1, and column 2, lines 49-51) readable by a machine (see column 2, lines 45-50), tangibly embodying at least one program of instructions executable by the machine (see column 2,

lines 62-65) to perform a method of recovery from failures (see column 8, lines 7-10) within a distributed computing environment (see Abstract, and figure 1, and column 2, lines 17-18), the method comprising:

detecting a failure within the distributed computing environment (see Abstract, and column 8, line 11); and

recovering from the failure (see Abstract, and column 6, lines 1-7, and column 8, lines 15-16), wherein one or more transactions affected by the failure are executed to completion (see column 6, lines 42-46, and figure 6.)

Badovinatz et al does not teach shared nothing distributed computing environment.

Tsukerman et al teaches a hybrid shared nothing/shared disk database system (see column 1, lines 6-8, and column 3, lines 64-65.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Badovinatz et al to introduce failure detection within a shared nothing distributed computer system.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Badovinatz et al by the teaching of Tsukerman et al, because it would allow failure detection and recovery within a shared nothing distributed computing environment.

Badovinatz et al as modified does not teach execution of transactions to completion without rolling back the one or more transactions and without requiring a reposting of the one or more transactions.

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Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Badovinatz et al as modified to add execution to completion without rolling back or requiring a posting of the transactions.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Badovinatz et al as modified, by the teaching of Cotner et al because recovering from the failure wherein one or more transactions affected by the failure are executed to completion without rolling back the one or more transactions and without requiring a reposting of the one or more transactions would speed up the process of failure detection and recovery within the distributed system.

As to claims 4, 11, and 18, Badovinatz et al as modified teaches wherein the shared nothing distributed environment comprises a processing group with a plurality of members (see Tsukerman et al, figure 1, and column 4, lines 11-14, and column 6, lines 13-16), and wherein the detecting comprises detecting a failure one of the plurality of members (see Tsukerman et al, column 16, lines 45-47.)

As to claims 5, 12, and 19, Badovinatz et al as modified teaches wherein the recovering ("means for recovering" in claim 12) comprises synchronizing messages regarding the one or more transactions among surviving members of the processing group (see Cotner et al, column 8, lines 9-20, and column 24, lines 38-41.)

As to claims 6, 13, and 20, Badovinatz et al as modified teaches wherein the recovering ("means for recovering" in claim 13) further comprises committing the one or more transactions (see Cotner et al, column 5, lines 50-54, and column 18, lines 36-40.)

As to claims 7, 14, and 21, Badovinatz et al as modified teaches wherein at least one member of the processing group survives the failure (see Badovinatz et al, column 6, lines 1-7), and wherein the recovering ("means for recovering" in claim 14) comprises means for electing a coordinator from among the at least one surviving member (see Badovinatz et al, column 2, lines 7-9, and see Tsukerman et al, column 7, lines 9-15.)

As to claims 8, 15, and 22, Badovinatz et al as modified teaches wherein the recovering ("means for recovering" in claim 15) further comprises receiving ("means for receiving" in claim 15) by the coordinator a list of ("an indication of the" in claim 15) one or more transactions from other surviving members (see Badovinatz et al, column 6, lines 15-23.)

As to claims 9, 16, and 23, Badovinatz et al as modified teaches wherein the recovering ("means for recovering" in claim 16) further comprises receiving ("means for receiving" in

claim 16) by the coordinator any commit protocol messages for the one or more transactions the coordinator does not already have (see Badovinatz et al, column 6, lines 50-67.)

As to claims 10, 17, and 24, Badovinatz et al as modified teaches wherein the coordinator initiates ("the means for recovering further comprises means for the coordinator to initiate" in claim 17) the commit protocol for the one or more transactions (see Badovinatz et al, column 4, lines 35-40, and column 6, lines 42-46.)

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patent is cited to further show the state of art with respect to failure detection and failure recovery in general:

U.S. Patent No. 5,892,895 to Basavaiah et al

4. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Tony Mahmoudi whose telephone number is (703) 305-4887. The examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici, can be reached at (703) 305-3830.

tm

April 30, 2002

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